

## Claims

1. A computer-implemented method for replacing software of an active packet switching device without interfering with packet flow, said method comprising:

receiving a failover message at a currently active packet switching device (A);

transferring protocol state information from said packet switching device (A) to a currently inactive packet switching device (B); and

de-activating said packet switching device (A) and activating said packet switching device (B).

2. The method of claim 1 wherein de-activating said packet switching device comprises:

sending a message requesting activation from said packet switching device (A) to said packet switching device (B);

3. The method of claim 1 further comprising:

halting receipt of new packets at said packet switching device (A) upon receipt of said failover message.

4. The method of claim 3 wherein activating said packet switching device (B) comprises beginning receipt of new packets at said packet switching device (B).

5. The method of claim 1 further comprising:  
  
reprogramming said packet switching device (A) after de-activating said packet switching device (A).
6. The method of claim 5 wherein reprogramming comprises retrieving new packet processing software from a remote location.
7. The method of claim 1 further comprising:  
  
reprogramming said packet switching device (B) prior to activating said packet switching device (B).
8. The method of claim 7 wherein reprogramming comprises retrieving new packet processing software from a remote location.
9. The method of claim 1 further comprising:  
  
operating said packet switching device (A) as a back-up after de-activating said packet switching device (A).
10. The method of claim 1 wherein said protocol state information comprises register values.
11. A computer-implemented method for reprogramming an active packet switching device without interfering with packet flow, said method comprising:

de-activating a current packet switching device (A) and activating a standby packet switching device (B) to handle packet flow previously handled by said packet switching device (B); thereafter

reprogramming said packet switching device (A); and thereafter

de-activating said packet switching device (B) and re-activating said packet switching device (B).

12. A computer program product for replacing software of an active packet switching device without interfering with packet flow, said product comprising:

code that receives a failover message at a currently active packet switching device (A);

code that transfers protocol state information from said packet switching device (A) to a currently inactive packet switching device (B);

code that de-activates said packet switching device (A) and activates said packet switching device (B); and

a computer-readable storage medium that stores the codes.

13. The product of claim 12 wherein said code that de-activates said packet switching device comprises:

code that sends a message requesting activation from said packet switching device (A) to said packet switching device (B);

14. The product of claim 12 further comprising:

code that halts receipt of new packets at said packet switching device (A) upon receipt of said failover message.

15. The product of claim 14 wherein said code that activates said packet switching device (B) comprises code that begins receipt of new packets at said packet switching device (B).

16. The product of claim 12 further comprising:

code that reprograms said packet switching device (A) after said packet switching device (A) is de-activated.

17. The product of claim 16 wherein said code that reprograms comprises code that retrieves new packet processing software from a remote location.

18. The product of claim 12 further comprising:

code that reprograms said packet switching device (B) before said packet switching device (B) is activated.

19. The product of claim 18 wherein said code that reprograms comprises code that retrieves new packet processing software from a remote location.

20. The product of claim 12 further comprising:

code that operates said packet switching device (A) as a back-up after said packet switching device (A) is de-activated.

21. The product of claim 12 wherein said protocol state information comprises register values.

22. A computer program product that reprograms an active packet switching device without interfering with packet flow, said product comprising:

code that de-activates a current packet switching device (A) and activates a standby packet switching device (B) to handle packet flow previously handled by said packet switching device (B);

code that reprograms said packet switching device (A) after de-activation;

code that de-activates said packet switching device (B) and re-activates said packet switching device (B) after reprogramming; and

a computer-readable storage medium that stores the codes.

23. A packet switching system comprising:

a packet switching device (A);

a packet switching device (B); and

a memory system storing:

code that de-activates said packet switching device (A) and activates said packet switching device (B) to handle packet flow previously handled by said packet switching device (B);

code that reprograms said packet switching device (A) after de-activation;  
and

code that de-activates said packet switching device (B) and re-activates said packet switching device (B) after reprogramming.

24. A packet switching system comprising:

a packet switching device (A);

a packet switching device (B); and

a memory system storing:

code that receives a failover message at said currently active packet switching device (A);

code that transfers protocol state information from said packet switching device (A) to said currently inactive packet switching device (B); and

code that de-activates said packet switching device (A) and activates said packet switching device (B).